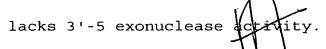
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WHAT IS CLAIMED IS:

- 1. A formulation of thermostable DNA polymerases comprising at least one thermostable DNA polymerase lacking 3'-5' exonuclease activity and at least one thermostable DNA polymerase exhibiting 3'-5' exonuclease activity.
- 2. A kit for the synthesis of a polynucleotide, said kit comprising a first DNA polymerase, wherein said first polymerase possesses 3'-5' exonuclease activity and a second DNA polymerase, wherein said second polymerase lacks 3'-5' exonuclease activity.
- 3. A kit for the synthesis of a polynucleotide, said kit comprising:
- (a) a first DNA polymerase, wherein said first polymerase possesses 3'-5' exonuclease activity selected from the group consisting of <u>Pyrococcus furiosus</u> DNA polymerase, <u>Thermotoga maritima</u> DNA polymerase, <u>Thermococcus litoralis</u> DNA polymerase, and <u>Pyrococus GB-D DNA polymerase</u>, and
- (b) a second DNA polymerase, wherein said second polymerase lacks 3'-5' exonuclease activity selected from the group consisting of <u>Thermus aquaticus</u> DNA polymerase, (exo-) <u>Thermococcus</u> <u>literalis</u> DNA polymerase, (exo-) <u>Pyrococcus</u> <u>furiosus</u> DNA polymerase, and (exo-) Pyrococcus GB-D DNA polymerase.
- 4. A kit according to claim 3, wherein said first and second DNA polymerases are thermostable.
- 5. A method of amplifying a polynucleotide sequence, said method comprising: the steps of mixing a composition with a synthesis primer, and a synthesis template, said composition comprising a first DNA polymerase possessing 3'-5' exonuclease activity, and a second DNA polymerase, wherein said polymerase

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- 6. A method of amplifying a polynucleotide sequence, said method comprising: the steps of mixing a composition with a synthesis primer, and a synthesis template, said composition comprising
- (a) a first polymerase possessing 3'-5' exonuclease activity selected from the group consisting of <u>Pyrococcus</u> furiosus DNA polymerase, <u>Thermotoga maritima</u> DNA polymerase, <u>Thermococcus litoralis</u> DNA polymerase, and Pyrococcus GB-D DNA polymerase, and
- (b) a second DNA polymerase, wherein said polymerase lacks 3'5 exonuclease activity selected from the group consisting of Thermus aquaticus DNA polymerase, (exo-)

 Thermococcus litoralis DNA polymerase, (exo-) Pyrococcus furiosus DNA polymerase, and (exo-) Pyrococcus GB-D DNA polymerase.
- 7. A method according to claim 6 wherein said first and second DNA polymerases are thermostable.
- 8. A method according to claim 6, wherein said first DNA polymerase is Pyrococcus furiosus DNA polymerase.
- 9. A method according to claim 7, wherein said second DNA polymerase is <u>Thermus aquaticus</u> DNA polymerase.
- 10. A method according to claim 8, wherein said second DNA polymerase is <u>Thermus aquaticus</u> DNA polymerase.
- 11. A kit according to claim 4, wherein said first DNA polymerase is Pyrococcus furiosus DNA polymerase.
- 12. A kit according to claim 4, wherein said second DNA

polymerase is <u>Thermus</u> <u>aquaticus</u> DNA polymerase.

- 13. A kit according to claim 11, wherein said second DNA polymerase is Thermus aquaticus DNA polymerase.
- 14. A kit according to claim 3, said kit further comprising DNA primers.
- 15. A kit according to claim 4, said kit further comprising DNA primers.
- 16. A kit according to claim 13, said kit further comprising DNA primers.

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